

Past and future taxonomic research in West Africa

by *Gérard J. Morel & Claude Chappuis*

Received 27 April 1992

In the opinion of Brown *et al.* (1982) only some 20 new species of birds have been discovered these last 20 years in the whole African continent, i.e. one species annually on average. Since discovery of new species is most likely in montane forests, where endemism is enhanced, and in regions where exploration is difficult, West Africa would appear at a special disadvantage in this respect. We shall review the forms (species or subspecies) new to science discovered in West Africa over the last 30 years, with emphasis on the new techniques—particularly bioacoustics—that give taxonomy a new impetus. For the Non-passerines, we have adopted the sequence of *The Birds of Africa*; for the Passerines, we have followed Bannerman (1953); for the new forms we use the names proposed by the authors; for *Stizorhina*, we have adopted the names given by Howard & Moore (1980).

The discovery of new forms can be attributed to 2 main techniques.

New forms from the study of skins

The study of skins, either obtained during recent exploration or of older origin, the classic technique, aided by morphological analysis, is still widely used.

PURPLE HERON *Ardea purpurea bournei* (Naurois 1966)

Compared with the nominate, *bournei* is very pale; the paleness of the first specimen that reached the British Museum was merely ascribed to bleaching (Bannerman & Bannerman 1968). Restricted to São Tiago island in the Cape Verde archipelago, its total population may be under 200 pairs. It builds its nest in trees and forages on dry, even stony ground. Not recognized by Brown *et al.* (1982).

GREY HERON *Ardea cinerea monicae* (Jouanin & Roux 1963)

Also a very pale form, with a population of 1000–2000 pairs, restricted to the Banc d'Arguin islands, Mauritania. Owing to its unique nesting behaviour (a scrape on the ground), to its entire life being spent in marine waters and its distinct plumage, it could be considered a full species (Mahé 1985). Considered a doubtful form by Brown *et al.* (1982).

SPOONBILL *Platalea leucorodia balsaci* (Naurois & Roux 1974)

Distinguished by its black bill without a yellow tip and by a near absence of yellow buff on the chest. Also restricted to Banc d'Arguin, with a population of several thousand pairs (Mahé 1985). The bulky nest is piled upon low clumps of *Chenopodiaceae*.

COE'S HONEYGUIDE *Melignomon eisentrauti* (Colston 1981—especially footnote p. 290; Louette 1981)

This new species is only the second within the *Melignomon* genus. Originally discovered by Serle (1959: 65) as early as 1956, then redescribed by Eisentraut in 1963, it was thought by both that their specimens were mere immatures of *M. zenkeri*. First described by Serle (1959) from Mount Nimba, Liberia, this honeyguide is certainly widespread in Upper Guinea forests. (Details of nomenclature and description by the 2 separate authors (Colston 1981, Louette 1981) are also given in Colston & Curry-Lindahl 1986.) (See Vuilleumier *et al.* this volume.)

[No English name given by author] *Phyllastrephus leucolepis* (Gatter 1985)

The type of this new species is represented by one specimen of undetermined sex, collected in Liberia, 6°12'N, 8°11'W, in a "transitional zone between evergreen and semideciduous tropical rainforest". Several individuals were observed, usually in bird parties including bulbuls, sunbirds and malimbés. The olive brown wing shows 2 pale bars, which are diagnostic, as this bulbul forages through the twigs with half opened wings. It seems that the wing pattern is used as an optical signal. (See Vuilleumier *et al.* this volume.)

GREY-HEADED BRISTLE-BILL *Bleda canicapilla moreli* (Erard 1991)

Based on specimens collected in Lower Casamance, Senegal, differs by its paleness and its bill shape from the nominate form which is only found in forest, from Guinea to Nigeria.

AFRICAN REED WARBLER *Acrocephalus baeticatus guiersi* (Colston & Morel 1984)

A. baeticatus remained unrecorded west of Chad until as late as 1960, when it was found in Senegal (Morel & Roux 1962). Subsequently it was described as a new subspecies (Colston & Morel 1984). Its range remains unknown; since *guiersi* lives in reedbeds, a naturally discontinuous habitat, it could be isolated. Widespread also in Mali (Lamarche 1980–81) and localized in Niger (Giraudoux *et al.* 1988).

RUFOUS CANE-WARBLER *Acrocephalus rufescens senegalensis* (Colston & Morel 1985)

Based on skins, obtained in Senegal, where it seems to live mainly if not exclusively in reedbeds; in Cameroun it is also found in sugar-cane. In Senegal, the pairs were widely spaced. As a whole, *A. rufescens*, a secretive but vocal species, is poorly known in West Africa.

PECTORAL PATCH CISTICOLA *Cisticola brunnescens mbangensis* (Chappuis & Erard 1973)

Restricted to the montane region of Adamawa, Cameroun, where it inhabits meadows with very short grass on stony ground. It is of smaller size, lighter coloration, with upperparts less intensely streaked, than the nominate race, but the voice seems similar.

ANNA'S FOREST FLYCATCHER *Melaenornis annamarulae* (Forbes-Watson 1970)

A species of the forest canopy, discovered on Mount Nimba, Liberia, and also found in southwestern Ivory Coast.

IBADAN MALIMBE *Malimbus ibadanensis* (Elgood 1958)

Hitherto regarded as endemic in southern Nigeria, there is one record recognized now from Owerri, east of the lower Niger (Marchant in Bannerman 1949) but first identified as *M. cassini*. Similarly Bannerman mentions *cassini* from Ibadan, recorded by Marshall. With the recognition of *ibadanensis* as a distinct species (Elgood 1958), both Marchant and Marshall agreed their sightings were almost certainly of *ibadanensis*, and Field (1979) accepted *ibadanensis* as occurring at Owerri. Now it seems likely that recent records of *cassini* from Tafo, Ghana (♂♂ only) (Grimes 1987) are likely to have been sightings of *ibadanensis* (Elgood in press). Formerly not uncommon, but local, at forest edges, in secondary forest and even gardens; but in view of a 10 year gap without any records (Elgood 1988), the species has come to be regarded as "endangered" (Collar & Stuart 1985).

New forms from acoustical signals

This group comprises new subspecies or species discovered by means of acoustical analysis, i.e. with the assumption that voice—or significant elements of a bird's vocalizations—are specifically distinct. This technique is valuable: (1) when 2 forms are morphologically very similar (e.g. *Streptopelia roseogrisea*/*S. decaocto*); (2) when of 2 closely related forms, one breeds in the Palaearctic and the other in the Afrotropics (e.g. *Cuculus canorus*/*C. gularis*); (3) when a polymorphic species is widely distributed over the continent (e.g. *Eupodotis ruficrista*). The acoustical analysis is usually confirmed by a morphological study.

CRESTED BUSTARD *Eupodotis ruficrista savilei* (Chappuis *et al.* 1979)

The race *savilei*, only found in West Africa, is vocally so distinct from the 2 other races *gindiana* and *ruficrista* by reason of the frequency used and by the rhythm and structure of the phrasing that an observer familiar with the latter 2 races may wonder what bird he is listening to (Fig. 1). *E. r. savilei* shows differences also in colour pattern and in nuptial display. Chappuis *et al.* (1979) recommended restoring *savilei* to its previous specific status.

AFRICAN COLLARED DOVE *Streptopelia roseogrisea* (Chappuis 1974–1985)

Long considered a mere subspecies of the Eurasian Collared Dove *S. decaocto* (Heim de Balsac & Mayaud 1962, Mackworth-Praed & Grant 1970) because of similar plumage and size; but comparison of their songs and flight calls (Fig. 2) compels recognition of 2 distinct species (Chappuis 1974–1985), confirmed by Urban *et al.* (1986).

EUROPEAN CUCKOO *Cuculus canorus* and **AFRICAN CUCKOO** *Cuculus gularis*

Because of their nearly identical adult plumage and closely comparable songs, these 2 forms have been considered as conspecific by several authors (e.g. White 1965, Voous 1960). This opinion was, however, revised as a result of morphological differences found in the young (Payne 1977). Confirmation is found in acoustical differences, even though these

are slight and in a species with strictly inherited song: in *canorus* the 2 (sometimes 3) notes are always on a descending scale, but in *gularis* always ascending or monotonous.

COMMON SCOPS OWL *Otus scops* and **AFRICAN SCOPS OWL** *Otus scops senegalensis*

Considered conspecific by Snow (1978) and also by Fry *et al.* (1988), the 2 are indeed morphologically close, but their voices are very distinctive (Chappuis 1974–85). In the last historical contact zone between these 2 forms before the last glaciation (i.e. in the north/south Sahara), there is an absence of frequency overlap in the song of these 2 forms, with a gap of 250 hz and also an absence of clinal variation of frequency, which is 1300 hz in southern Morocco (recent personal measurements) compared with 1000 hz in West Africa. These differences, more distinct and rigid *within* the last contact zone than away from it (Van der Weyden 1973), suggest an ancient separation, prior to the geographical isolation, by means of vocal separation of these 2 forms, which thus deserve specific status.

AFRICAN BARRED OWLET *Glaucidium capense ethecopari* (Erard & Roux 1983)

Smaller than the nominate race and more restricted to forest, *ethecopari* ranges from the forests of Mount Nimba, Liberia (its place of discovery) through the southern forest belt of Ivory Coast and is common in the Ndouci-Lamto area. Insufficient acoustical data originally led to the conclusion that the east and west African populations were specifically distinct; but further studies have shown that both forms have similar vocal signals and are therefore only subspecies (Chappuis 1974–85).

RUSTY BROAD-BILLED ANT-THRUSH *Stizorhina fraseri* and **FINSCH'S BROAD-BILLED ANT-THRUSH** *Stizorhina finschi*

These 2 rather similar forms present acoustical differences in both their songs and in their cries: lower pitch (frequency ratio of 1.8) and longer duration (ratio of 1.55) for *finschi* (Fig. 3). These differences, taken separately, exceed what is normally expected in 2 populations of one species occupying the Guinean and Congolese forest blocks; while taken together, they support the diagnosis of 2 populations whose acoustical isolation has been achieved and which should be treated as a superspecies.

PLAINTIVE CISTICOLA *Cisticola dorsti* (Chappuis & Erard 1991)

Formerly assigned to *C. ruficeps* as the subspecies *C. r. mongalla*. Compared with *C. ruficeps*, the newly named *C. dorsti* exhibits a number of subtle colour differences, a longer tail and smaller white tail spots. Acoustically *ruficeps* and *dorsti* have nothing in common (see sonagrams in Chappuis & Erard 1991). *C. dorsti* inhabits the grass steppe with low bushes of northwestern Nigeria, northern Cameroun and southern Chad. It lives in sympatry with *C. ruficeps guinea*.

RIVER PRINIA *Prinia fluviatilis* (Chappuis *et al.* in press)

First found on the Upper Niger in 1969, now also in Chad and more recently in northwestern Senegal, its range remains to be elucidated. The

song of the River Prinia was (and certainly remains) confused with that of the Tawny-flanked Prinia *P. subflava*. In *fluviatilis* there is only a slow and moderate variation in frequency, whereas in *subflava* it varies sharply and extensively—the notes of *fluviatilis* never show on a sonagram the fine striations (due to frequency modulation) produced by *subflava* (Fig. 4). These vocal characteristics are recognisable in the field and in addition the habitats of the 2 prinias are specifically distinct. Subtle but definite morphological differences have also been revealed.

ORANGE-THROATED APALIS spp.: GOSLING'S APALIS *Apalis goslingi*, BAMENDA APALIS *A. bamendae*, BUFF-THROATED APALIS *A. rufogularis* and SHARPE'S APALIS *A. sharpii* (Chappuis 1974–85, Chappuis 1980)

Acoustical analysis was used to separate a member of this group, the Chestnut-throated Apalis *A. porphyrolaema*, from others (Keith & Gunn 1971). The above 4 *Apalis*, which were given specific status by Bannerman (1953) and by Mackworth-Praed & Grant (1970), were treated by White (1960) as *A. rufogularis*, *A. sh. sharpii*, *A. sharpii bamendae* and *A. sharpii goslingi*. White's arrangement is not supported by these forms' vocal structure: *rufogularis* and *sh. sharpii* utilize a repertoire of structurally similar motifs (with positive reactions to each other's playback in the field) and must be treated as a superspecies. *goslingi* and *bamendae* utilize a repertoire of simple notes, of strongly modulated frequency in *bamendae*, but little modulated and of a more rapid tempo in *goslingi* (Fig. 6). The latter are 2 distinct species that live in very different habitats.

JAMBANDU INDIGOBIRD *Vidua raricola* (Payne 1982)

Male *raricola* mimic the song of the Black-bellied Fire-finch *Lagonosticta rara* and the young indigobirds mimic the latter's mouth pattern (gape tubercles and spots on the roof of the mouth). The distribution of *V. raricola* matches closely that of *L. rara* (see later discussion). They are both found in Sierra Leone, Ghana and northern Cameroun. (See Vuilleumier *et al.* this volume.)

BAKA INDIGOBIRD *Vidua larvaticola* (Payne 1982)

Parasitizes and mimics vocally the Black-faced Fire-finch *Lagonosticta larvata*. *V. larvaticola* is distinguished by the same adaptations to its host as those of *V. raricola* (see later discussion). It ranges from Senegambia to Ethiopia. (See Vuilleumier *et al.* this volume.)

Discussion

The above examples are given in a plea to restore the importance of avian taxonomic research, at present so severely neglected in several countries, emphasised by the drastic reduction in funds apportioned to museums. Denial of research amounts to a threat to the collections which are the foundations of these museums. This disfavour has several causes. Taxonomic research has become overshadowed by the great impulse of more recent disciplines, such as ecology and ethology; in comparison taxonomy is wrongly coming to be considered an outdated discipline. In addition, a frequently uncritical regard for life demands preclusion of the killing of any bird whatever for whatever reasons, enhanced by

unconfirmed opinion that museums are well stocked with specimens and that collecting is a direct unmeasured threat to uncommon species. Nevertheless, knowledge and documentation of many species is markedly insufficient for their own conservation, particularly in West Africa, whereas the insatiable thirst of some past collectors no longer exists. Many species are considered endangered on account of their small populations, while knowledge of their taxonomic status as well as of their degree of genetic isolation is possibly essential for their protection and even their survival.

The new species cited are examples of many others that have required or require taxonomy to resolve their problems. The Spoonbill *Platalea leucorodia* and the Little Bittern *Ixobrychus minutus* breed in the Senegal valley, i.e. within the tropics. The Spoonbill has not been collected, so its taxonomic status or whether it is endemic and requires especial protection is unknown; the Little Bittern is thought to be of the nominate race, but this needs confirmation (Morel & Morel 1989). The Glossy Ibis *Plegadis falcinellus* that was nesting in northern Mali (Morel & Morel 1966) was not observed again and its taxonomic status also remains unknown. In the contact zone of the western (*savilei*) and of the eastern (*gindiana*) African Crested Bustard *Eupodotis ruficrista* the question whether the 2 populations are vocally isolated deserves study. The chance discovery of other new species undoubtedly awaits the knowledgeable explorer, but this will happen more and more rarely.

Taxonomy, however, is receiving fresh impulse from modern techniques with live birds. Mathematical aid (e.g. discriminant analysis) can be instrumental in morphological studies (wing, tail and tarsus length) of outwardly similar forms, e.g. *Cisticola dorsti* and subspecies of *C. ruficeps* (Chappuis & Erard 1991). Also, when only tiny fragments of feather or very small samples of blood are available, DNA analysis can help to distinguish allied forms, as was the case in describing *Laniarius liberatus* (Smith *et al.* 1991) in Somalia, where one live specimen only could be secured, and had to be released. (See also Vuilleumier *et al.* this volume.)

About half of the new forms mentioned above from West Africa clearly indicate that bioacoustics (supported by biometrics) was the decisive technique used in their discovery (*Prinia fluviatilis*, *Vidua* spp.) or in elucidating their superspecies status (*Otus scops*, *Cuculus canorus* . . .). Bioacoustics is relevant in 2 types of problem. Firstly, with populations in sympatry: no two sympatric populations with distinct vocalizations can be from a single species, more especially if these vocalizations can be correlated with distinct habitats. Secondly, it is relevant with allopatric populations, when assessment is more delicate and is based on the importance of the acoustical deviation in the following main parameters: range of notes, their speed of frequency variation, and the harmonic and temporal structure of the call or song. These differences, of course, will be all the more significant if they concern several of these parameters simultaneously (Chappuis 1980). The value of vocalizations as a means of distinguishing forms is now recognized, and the diagnosis of every new species should generally include a paragraph on 'Voice' with sonagrams.

Finally, the outstanding study of Payne (1982) on the genus *Vidua* deserves mentioning. The confusing black plumage of all *Vidua* (=

Hypochera) males, more or less greenish or bluish depending on the light, had always been a challenge to taxonomists. Amongst other parasitic avian species, the specific adaptation of the nestling's mouth marks to that of the host, as shown by Payne, is unique. The number of queried synonyms and the *nomina dubia* still left unresolved attests to the difficulty of the task and is also a stimulating invitation for further research, including especially the vocalisation differences and mimicry of the male *Vidua*.

Acknowledgements

We express our thanks to J. H. Elgood over *M. ibadanensis* and to J. F. Monk for improving our text and our English.

References:

- Bannerman, D. A. 1949. *The Birds of Tropical West Africa*. Vol. 7. London, Crown Agents.— 1953. *The Birds of West and Equatorial Africa* 2 vols. Oliver & Boyd.
- Bannerman, D. A., & Bannerman, W. M. 1968. *History of the Birds of The Cape Verde Islands*. Oliver & Boyd.
- Brown, L. E., Urban, E. K. & Newman, K. 1982. *The Birds of Africa*. Vol. 1. Academic Press.
- Chappuis, C. 1974–1985. Illustration sonore de problèmes bioacoustiques posés par les oiseaux de la zone éthiopienne. *Alauda* 42: 197–222 & 467–500, 46: 327–355, 47: 192–212; with accompanying discs. Soc. Etudes Orn. Muséum, 4, avenue du Petit-Château. 91800 Brunoy, France.
- 1980. Study and analysis of certain vocalizations as an aid in classifying African Sylviidae. *Proc. IV Pan-Afr. Orn. Congr. 1976*: 57–63.
- Chappuis, C. & Erard, C. 1973. A new race of Pectoral-patch Cisticola from Cameroun. *Bull. Brit. Orn. Cl.* 93: 143–144.
- , — 1991. A new cisticola from west-central Africa. *Bull. Brit. Orn. Cl.* 111: 59–70.
- Chappuis, C., Erard, C. & Morel, G. J., 1979. Données comparatives sur la morphologie et les vocalisations des diverses formes d'*Eupodotis ruficrista*. *Malimbus* 1: 74–89.
- , —, — (in press). Morphology, habitat, vocalizations and distribution of the River Prinia *Prinia fluviatilis* Chappuis. *Proc. VII Pan-Afr. Cong.*
- Collar, N. J. & Stuart, S. N. 1985. *Threatened Birds of Tropical West Africa*. 3rd Edn. Part 1. ICBP/IUCN Red Data Book. ICBP.
- Colston, P. R. 1981. A newly described species of *Melignomon* (Indicatoridae) from Liberia, West Africa. *Bull. Brit. Orn. Cl.* 101: 289–291.
- Colston, P. R. & Curry-Lindahl, K. 1986. *The Birds of Mount Nimba, Liberia*. British Museum (Natural History), London.
- Colston, P. R. & Morel, G. J. 1984. A new subspecies of the African Reed Warbler *Acrocephalus baeticatus* from Senegal. *Bull. Brit. Orn. Cl.* 104: 3–5.
- , — 1985. A new subspecies of the Rufous Swamp Warbler *Acrocephalus rufescens* from Senegal. *Malimbus* 7: 61–62.
- Eisentraut, M. 1963. *Die Wirbeltiere des Kamerungebirges*. Hamburg & Berlin.
- Elgood, J. H. 1958. A new species of *Malimbus*. *Ibis* 100: 621–624.
- 1988. Rediscovery of *Malimbus ibadanensis* Elgood, 1958. *Bull. Brit. Orn. Cl.* 108(4): 184–185.
- Erard, C. 1991. Variation géographique de *Bleda canicapilla* (Hartlaub) 1854 (Aves, Pycnonotidae). Description d'une sous-espèce nouvelle en Sénégal. *L'Oiseau et R.F.O.* 61: 66–67.
- Erard, C. & Roux, F. 1983. La Chevêchette du Cap *Glaucidium capense* dans l'Ouest africain. Description d'une race géographique nouvelle. *L'Oiseau et R.F.O.* 53: 97–104.
- Forbes-Watson, A. D. 1970. A new species of *Melaenornis* (Muscicapinae) from Liberia. *Bull. Brit. Orn. Cl.* 90: 145–148.
- Fry, C. H., Keith, S. & Urban, E. K. 1988. *The Birds of Africa*. Vol 3. Academic Press.
- Gatter, W. 1985. Ein neuer Bülbül aus Westafrika (Aves, Pycnonotidae). *Journal f. Orn.* 126: 155–161.
- Giraudoux, P., Degauquier, R., Jones, P. J., Weigel, J. & Isenmann, P. 1988. Avifaune du Niger: état des connaissances en 1986. *Malimbus* 10: 1–140.
- Grimes, L. G. 1987. *The Birds of Ghana*. British Ornithologists' Union, Tring, UK.

- Heim de Balsac, H. & Mayaud, N. 1962. *Les Oiseaux du Nord-ouest de l'Afrique*. P. Lechevalier, Paris.
- Howard, R. & Moore, A. 1980. *A Complete Check-list of the Birds of the World*. Oxford University Press.
- Jouanin, C. & Roux, F. 1963. Une race nouvelle de Héron cendré *Ardea cinerea monicae*. *L'Oiseau et R.F.O.* 33: 103–106.
- Keith, S. & Gunn, W. W. H. 1971. Birds of African Rain Forests. *Sounds of Nature* No. 9. Federation of Ontario Naturalists, Don Mills Ontario (two 12 inch discs).
- Lamarche, B. 1980–1981. Liste commentée des oiseaux du Mali. *Malimbus* 1: 121–158; 2: 73–102.
- 1988. Liste commentée des oiseaux de Mauritanie. *Etudes sahariennes et ouest-africaines*. 1, 4 et spécial.
- Louette, M. 1981. A new species of Honeyguide from West Africa (Aves, Indicatoridae). *Revue Zool. Afr.* 95: 131–135.
- Mackworth-Praed, C. W. & Grant, C. H. B. 1970. *Birds of West Central and Western Africa. African Handbook of Birds*. Series 3, Vol. 1. Longman.
- Mahé, E. 1985. Contribution à l'étude scientifique de la région de Banc d'Arguin. 21°20'N/19°20'N. Peuplements avifaunistiques. 2 fascicules. *Thèse Acad.* Montpellier. 575 pp and 56 pp.
- Morel, G. J. & Morel, M.-Y. 1989. Une héronnière mixte sur le lac de Guier (Sénégal) avec référence spéciale à *Ixobrychus m. minutus* et *Platalea leucorodia*. *L'Oiseau et R.F.O.* 59: 290–295.
- Morel, G. J. & Roux, F. 1962. Données nouvelles sur l'avifaune du Sénégal. *L'Oiseau et R.F.O.* 32: 28–56.
- , — 1966. Les migrateurs paléarctiques au Sénégal. *Terre et Vie* 20. 1. Non-passereaux: 19–72; Passereaux et synthèse générale: 143–176.
- Naurois, R. de. 1966. Le Héron pourpré de l'archipel du Cap Vert, *Ardea purpurea bournei* ssp. nov. *L'Oiseau et R.F.O.* 36: 89–94.
- Naurois, R. de & Roux, F. 1974. Précisions concernant la morphologie, les affinités et la position systématique de quelques oiseaux du Banc d'Arguin (Mauritanie). *L'Oiseau et R.F.O.* 44: 72–84.
- Payne, R. B. 1977. Juvenile plumage of *Cuculus canorus* and *Cuculus gularis* in Africa. *Bull. Brit. Orn. Cl.* 97: 48–54.
- 1982. *Species Limits in the Indigobirds (Ploceidae, Vidua) of West Africa: Mouth Mimicry, Song Mimicry, and Description of New Species*. Museum of Zoology, University of Michigan, No 162. Ann Arbor.
- Serle, W. 1959. Note on the immature plumage of the Honey-guide *Melignomon zinkerii* Reichenow. *Bull. Brit. Orn. Cl.* 79: 65.
- Smith, E. F. G., Arctander, P., Fjeldsa, J. & Amir, O. G. 1991. A new species of shrike (Laniidae: *Laniarius*) from Somalia, verified by DNA sequence data from the only known individual. *Ibis* 133: 227–235.
- Snow, D. W. 1978. *An Atlas of Speciation in African Non-Passerine Birds*. British Museum (Natural History), London.
- Urban, E., Fry, C. H. & Keith, S. 1986. *The Birds of Africa*. Vol. 2. Academic Press.
- Van der Weyden, W. J. 1973. Vocal affinities of the African and European Scops Owls *Otus scops* (Strigidae). *Bull. IFAN*. 35 sér. A, No. 3: 716–722.
- White, C. M. N. 1960. A Check List of the Ethiopian Muscicapidae (Sylviinae). Part 1. *Occ. Pap. Nat. Mus. Southern Rhodesia*: 704–707.
- 1965. *A Revised Check List of African Non-Passerine Birds*. Government Printer, Lusaka.

Addresses: Dr Gérard J. Morel, 1, route de Sallenelles, 14860 Bréville-les-Monts, France.
 Dr Claude Chappuis, "Les Chardonnerets", Lotissement du Fer à Cheval, La Bouille, 76530 Grand-Couronne, France.